Abstract Submitted
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Tangential Extreme Ultraviolet and Soft X-Ray (EUV/SXR) Diagnostic System on the HBT-EP Tokamak[1] BOTING LI, J.P. LEVESQUE, G.A. NAVRATIL, M.E. MAUEL, Columbia University — Non-invasive measurements of the internal characteristics of MHD mode structures and equilibrium evolution can be done with optical diagnostics. We present the progress on the design of the two-color multi-energy tangential extreme ultravioletand soft x-ray (EUV/SXR) diagnostic system in the HBT-EP tokamak. The new system will allow reconstruction of temperature profiles and their fluctuations versus time. Two 16-channel diode arrays are used in the system. A filter wheel with four groups of dual-filters is adopted to implement multiple combinations of filters, accomplish easier calibration and protect the filters during discharge cleaning. By using combinations of filters with identical plasma views, it is possible to determine the electron temperature by the ratio of the amplitudes of the signals from different filters. The expected synthetic diagnostic for the emission characteristics of the equilibrium and perturbed temperature profiles of kink and tearing modes is shown.

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